JULY 1990

EUROPEAN SOFTWARE DEVELOPMENT CENTRES

ORGANISATION BENCH-MARK

INPUT®

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Abstract

This report is a review of the issues related to the establishment and management of a European Software Development Centre that has a foreign founder.

The report contains 53 pages and 6 exhibits.

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I

Introduction

I

Introduction

This report is produced as the result of a bench-mark in the form of a series of meetings that have taken place between Rank Xerox and other companies that have been facilitated by INPUT.

The structure of most of these meetings has been roughly in accordance with the list of topics shown in Appendix G, in the form of a questionnaire. The meetings have been documented by INPUT, and the minutes are presented in the Appendixes of the report.

Based upon the responses of the organisations contacted, and some years of industry experience, INPUT summarised these meetings, and made conclusions that form the main body of the report.

The purpose of the bench-mark has been to learn and understand the experiences of similar organisations—that is, European Software Development Centres with a foreign founding organisation.

The methods adhered to have been consistent with the bench-mark principles included in Xerox' Leadership through Quality process.

INPUT believes a number of significant conclusions have been reached that could provide long-term benefits to the successful growth of the European Software Development Centre.

II

Executive Overview

II

Executive Overview

This report is produced as a result of a series of meetings between Rank Xerox and six other companies of non-U.K. origin that were selected as having European Software Development Centres. Rank Xerox and the six companies are shown in Exhibit II-1, along with their locations and origins.

EXHIBIT II-1

Bench-mark Participants

Company	Origin	European Location
Andersen Software	U.S.	Sophia, Valbonne, France
Bell Northern Research	Canada	Maidenhead, Berks., U.K.
Digital Equipment Co.	U.S.	Reading, Berks., U.K.
Hewlett-Packard	U.S.	Wokingham, Berks., U.K.
Prime	U.S.	Milton Keynes, Bucks., U.K.
Rank Xerox	U.S.	Welwyn Garden City, Herts.
Siemens	Germany	Woodley, Berks., U.K.

Discussions were based on the following three main topics:

- The benefits of a European Software Development Centre
- The internal organisation of a European Software Development Centre
- The interactions of a European Software Development Centre with other parts of the organisation

The report contains a summary of the main points that were gleaned from the meetings and an assessment of the key lessons to be learned from each of the other organisations.

The report identifies that the organisational aspects were considered of greater importance than the technical ones, and arrives at a set of five critical success factors for the effective management of the European Software Development Centre.

These five success factors are:

- Having two strong champions committed to the centre's success, one in the founding organisation, and one being the manager of the centre itself
- Ownership of a mainline product or programme with worldwide responsibility
- A strong emphasis on interfaces and communications with other parts of the company, especially the founding development organisation
- A correct balance between giving the European Software Development Centre a high degree of autonomy, and the need to provide strategic direction from an overall company point of view
- A correct balance between supporting the founding development organisation, and supporting the local sales and marketing organisation

INPUT arrived at these conclusions by talking to similar companies with similar problems at different stages of development and believes that if these conclusions are taken into careful consideration, significant mistakes in the planning of the medium- to long-term future of the European Software Development Centre will be avoided.

III

Bench-mark Diary

III

Bench-mark Diary

14 February, 1990: Meeting between Rank Xerox and INPUT

6 March, 1990: Meeting between Hewlett-Packard and INPUT

Minutes of the following meetings are provided as appendixes in this report:

20 April, 1990: Meeting between Rank Xerox, Hewlett-Packard and INPUT

2 May, 1990: Meeting between Rank Xerox, Prime and INPUT

8 May, 1990: Meeting between Rank Xerox, DEC and INPUT

14 May, 1990: Meeting between Rank Xerox, Andersen Software and INPUT

23 May, 1990: Meeting between Rank Xerox, Siemens and INPUT

11 June, 1990: Meeting between Rank Xerox, Bell Northern Research and INPUT

Minutes from the following meeting are a separate document and will be circulated to all the participants, as well as Siemens, which was unable to attend but wishes to be associated with the group's activities.

15 June, 1990: Meeting between Rank Xerox, Andersen Software, Bell Northern Research, Digital, Hewlett-Packard and Prime

IV

Summary of Meetings

IV

Summary of Meetings

This section of the report summarises the major points that have arisen out of all the meetings, and identifies the trends that are common to most of the organisations contacted.

A

Interfaces with the Founder Organisation

One of the most significant issues, if not the most significant, is the interface with the founder organisation.

Setting up any new organisation presents a significant management challenge, but doing it in a foreign country clearly exacerbates this challenge. Exhibit IV-1 summarises the additional problems that arise for a number of straightforward reasons but can contribute to major difficulties:

EXHIBIT IV-1

Communications Problems with Foreign Founder Organisations

- Lack of informal communications
- Parent/child relationship
- Lack of credibility
- National cultural differences
- Cultural differences related to organisation size

- Lack of informal communications that normally aid the workings of an organisation
- A tendency to develop a parent-child rather than an adult-adult relationship
- A mutual lack of credibility due to lack of track record
- National cultural differences
- Cultural differences by virtue of different organisation sizes

Failure to solve these problems will typically lead to poor motivation, and therefore high turnover of staff, poor quality and poor performance. The result is an increasingly vicious circle that exacerbates the credibility problem.

Exhibit IV-2 summarises the solutions to these problems, which are varied but typically include:

EXHIBIT IV-2

Solutions to Communication Problems

- Circulation of people
- Enable early credibility
- Champions
- Technical facilities
- Mutual tolerance and understanding
- Frequent meetings

- Moving people from parent to subsidiary and vice versa in order to develop working relationships
- Enabling the new organisation to achieve early victories to establish credibility
- Having a senior person in the founder development organisation to champion the new organisation
- Having good technical communications facilities
- Developing mutual understanding of cultural differences

- Holding frequent meetings
- Planning to make the new organisation as autonomous as possible as quickly as possible

B

Project Responsibilities

Different companies divide the responsibilities between development and marketing in different ways, but it is generally accepted that the development manager should have a worldwide responsibility for the product or programme.

Typically a company will set up a marketing organisation when it enters a new country that has responsibility for activities in that country. The development organisation, on the other hand, comes in later and tends not to have country responsibility but has product responsibility back to the development part of the founder organisation.

The responsibility issue is therefore complex, since there is a need to interface with central development, central marketing, and the local marketing organisation, as well as others.

Exhibit IV-3 summarises certain trends that have been detected, namely:

EXHIBIT IV-3

Organisational Trends

- Autonomous business units
- Direct contact with clients
- Integration of marketing function with development
- Interaction with local organisation

- A trend towards a business unit organisation where project managers have revenue responsibilities
- A tendency to create direct contact with the clients, which is good motivationally and for quality
- A tendency to integrate at least part of the product marketing into the development organisation
- Attempts to interact with local country marketing organisations separately from the founder development organisation

A trend towards greater autonomy can also create its own problems, such as conflicts for product ownership between different parts of the organisation.

There is clearly, therefore, an important role for senior management, especially in starting up projects and tackling the problem of freeing resources to tackle new projects.

Rotation of resources and encouraging people not to maintain too-narrow specialisations can also impact this problem.

Senior management also has a role in the resolution of marketing development conflicts, typically over moving targets.

C

Career Development and Recruitment

There is a recognised problem in providing a career path for technical staff. Some organisations provide only a management route; others provide a technical consultancy route.

Most companies prefer to recruit trainees, but this approach is not always possible and experts sometimes have be bought in. In the same way it can be difficult to grow management capability.

Rotating staff into and out of other parts of the company and having a set procedure to do so can be an important contribution to this problem.

D

Quality Issues

Quality goals tend to be associated with maintenance and customer feedback in order to assess satisfaction. Performance against budget and delivery schedules are also indications of quality.

Transferring software from one organisation to another can be a major trauma if quality is not agreed upon and checked first before the handover. Failure to agree and check can greatly exacerbate organisation problems and create long, difficult and often emotional arguments.

E

Finance

Funding tends to be from the founding development organisation, but some organisations have a small proportion of local customers which also provide funding.

Paying of bonuses can present a problem. Bonuses can be resented by some staff, and it is very important to see that bonuses are fair. Fairness can be a complex issue because extra hours do not necessarily indicate higher performance, and bonuses on the basis of time or budget are dependent upon the quality of the initial estimates.

V

Assessment of Contributing Organisations

V

Assessment of Contributing Organisations

Without going into detail, it is possible to identify some key strengths of each of the organisations that have contributed to the bench-mark. A brief assessment of each organisation is contained in this section; overall conclusions are in the Overall Conclusions.

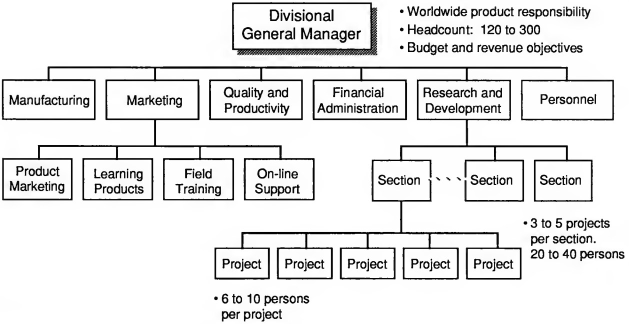
A

Hewlett-Packard

The divisional model is a brilliant concept that Hewlett-Packard developed. Every division operates as an autonomous business; every division has a similar model and worldwide responsibility. The model is shown in Exhibit V-1.

EXHIBIT V-1

Hewlett-Packard Divisional Model


Divisional General Manager
• Worldwide product responsibility
• Headcount: 120 to 300
• Budget and revenue objectives
Manufacturing
Marketing
Quality and Productivity
Financial Administration
Research and Development
Personnel
Product Marketing
Learning Products
Field Training
On-line Support
Section
Section
Section
• 3 to 5 projects per section. 20 to 40 persons
Project
Project
Project
Project
Project
• 6 to 10 persons per project

There are six functions in each division, although the balance may be different in each one according to circumstances. The six functions are manufacturing, personnel, quality and productivity, financial administration, marketing, and research and development. These functions can be shared with another division, and occasionally quality and productivity are embedded elsewhere. The size of a division is typically 120 - 300 people divided into sections, with 3 - 5 projects per section and 6 - 10 engineers per project.

The product manager is only the first level from the bottom in HP's management structure, yet this manager has complete responsibility for a product, including product marketing and revenue targets.

The strengths of this model are that it is organic and allows easy spawning of new businesses, it reinforces the company culture since the model is always the same, it delegates a great deal of responsibility and motivation, and it makes intracompany communication work on a common understanding.

The key lesson for Rank Xerox is obviously not as a role model, but to recognise the gains in flexibility, motivation, communication problems, and commitment from setting up an organisation that is fully autonomous and responsible for revenues. However, the consequences of this model are that it clearly requires a significant amount of senior management support and tolerance, and a preparedness by senior managers to resolve conflicts between different divisions. It also requires a definite vision in order to ensure that all the divisions are moving in the same direction.

A definite weakness of Hewlett-Packard's approach is the lack of a dual career path for technical as well as managerial staff. The model commented upon above has very few layers of management, and the lack of a path for technical people exacerbates the problem. HP has taken the attitude that it is more economical to recruit trainees to a level of competence than to have in-house experts. HP may well have to tackle this career path problem in the near future, as Bell Northern and Digital are doing now.

B

Prime

Prime is a very good example of how not to proceed. Prime has suffered significant problems as a result of the hostile take-over attempt by MAI and the J.H. Whitney purchase, and as a result Prime has suffered redundancies.

The solution of the manager's spending one week per month in the States is not coherent and is not likely to contribute much to a solution. People from the States should be spending one week per month in Milton Keynes.

It would be more coherent for the parent organisation to leave Milton Keynes alone if the policy was to give greater autonomy. It does make sense if Prime in the U.S. is still trying to control Milton Keynes strictly. In other words Milton Keynes is getting the worst of both worlds: not being independent, and not being supported.

C

Digital

Hewlett-Packard. Due to Digital's matrix organisation with mirror miniorganisations throughout the company, the level of communication necessary before making a decision is frightening. Jac Simensen must spend 99.99% of his time in meetings. The advantages have clearly been a set of very coherent products, but the costs must be frightening.

Digital is dismantling the marketing part of the organisation, probably as a result of a political decision after Jack Shields' departure to Prime, but the key is that Digital recognised it will have to devolve revenue responsibility to the research and development organisations in order to slim down and be more efficient. In other words Digital is heading in the same direction as Hewlett-Packard.

D

Siemens

A theme common to others but learned by Siemens is the importance of allowing the R&D function to have direct contact with the customers. Also, Siemens has recognised, much to its cost, that it has underestimated the cultural differences between the U.K. and Germany.

Apart from cultural problems due to national differences, about which everybody has his or her own opinions, Siemens' major problems have been cultural differences due to interaction of different kinds of organisations.

Siemens is a small, informal organisation in a shopping centre and interfaces with an enormous organisation of 35,000 employees. The company suffers from the company culture clash between Nixdorf and Siemens, one of which is a marketing-oriented company, and the other an engineering-oriented company. There has been a total lack of sensitivity to these problems, and it will cost a great deal of money.

E

Andersen Software

Andersen Software has gone through growing pains similar to those of everybody else, and there is nothing startling about the conclusions and lessons learned. However, there is one important lesson that can be learned, or at least appreciated, about Andersen Consulting.

The company has a very strong and coherent company culture as a result of its employee induction process at the Chicago headquarters. Andersen Consulting therefore has a similar set of procedures, environments and tools all over the world, which enables it to provide a multinational

capability to support clients that is the envy of many other professional services organisations. The key is Andersen's willingness to move people around all the time without worrying too much about people's specialities. This willingness to rotate people has come about because of the nature of Andersen's services business, but it has also helped the company to set up and grow product organisations very quickly.

In addition to the speed of set-up due to the ready availability of people, mobility has also given Andersen two other key advantages. Rotating people into and out of the software development organisation means that the consultants in the field who are close to the clients actually use the products and are product salespeople. Also, since the consultants understand the development organisation, they provide a very high quality and quantity of feedback before and after product launch, which leads to a better capture of user requirements and faster assessment of product quality.

There is clearly a penalty to be paid, since it is often difficult for a company to adjust from services to products and vice versa; however, Andersen's willingness to rotate people around the organisation and to expect them to adapt and succeed is an important lesson.

F

Bell Northern Research

It is difficult to gain any definite perception due to a lack of information, but Bell Northern is very experienced and has recognised the need to develop dual career paths for management and technicians. How Bell Northern proposes to develop dual paths is not clear.

VI

Overall Conclusions

VI

Overall Conclusions

Given the major items of discussion from each of the meetings and a brief assessment of each of the organisations visited, it is possible to draw overall conclusions that could have a significant effect on the management of a European Software Development Centre. The young organisations and the old organisations all show similar tendencies, and there has been a significant level of agreement on identifying the key issues.

If Rank Xerox can incorporate these lessons in its long-term vision, and accept that these measures will have to be taken eventually, it may assist in making some of the decisions months earlier. All organisations have to go through a learning process, but INPUT believes some of the material in the bench-mark could make the learning process less painful and less expensive.

The overall conclusion then, is that there are five critical success factors for setting up and successfully managing a European Software Development Centre, and these five factors are interlinked. The five are summarised in Exhibit VI-1, and described below.

EXHIBIT VI-1

Critical Success Factors for a European Software Development Centre

- Two champions
- Mainline product ownership
- Communications and interfaces
- Balances of autonomy vs. strategy
- Balance between founders

a. **The European Software Development Centre needs two champions—one in the founding organisation and one in the centre. Two champions are needed—not just to ease communication between the two, although communication is extremely important—but also as an important role within his/her own locations.**

The Centre needs a very senior manager in the founding organisation who is committed to the ESDC's success. This champion can represent the European Software Development Centre's views, problems, and different perspectives at strategic meetings. This champion can also represent the centre for administration and procedures purposes.

The other champion is the European Software Development Centre's manager. It is important that this person is not only committed but dedicated to the centre's successful long-term implementation, and does not, for example, take on the job as just another part of his or her administrative duties.

b. **The European Software Development Centre must have ownership of an important mainline product or programme, with worldwide responsibility for it.**

Failure to recognise this need can be very costly. The most obvious benefit is the positive motivation of people who have to feel responsible for what they produce, and the challenge enables the centre to develop very quickly in order to provide full, high-quality service. In other words, the centre becomes a centre of excellence much more quickly, and is more likely to retain high-calibre people.

A less obvious reason, but no less important, is that ownership of a mainline product or programme gives the centre a more equal footing with the founding organisation and a clear incentive to mirror the founding organisation's practises and procedures. Ownership provides a more coherent organisation more quickly, and assists in communication between the two.

c. **The European Software Development Centre must establish a strong emphasis on interfaces and communications with other parts of the company, especially with the founding development organisation.**

These interfaces are the principle ways in which the organisation will be assessed, and attention to the needs of marketing and the local sales organisations is important.

The most critical interface is clearly with the founding organisation; this report has already been identified how two champions and ownership of a mainline product can assist in communication. Although

often difficult to cost-justify, movement of people from both organisations to visit each other or to work on temporary secondment can have a significant impact on integrating the new centre into the overall company quickly and efficiently. Regular and effective communications—by teleconferencing, electronic mail, etcetera—are also very important.

d. **The European Software Development Centre must achieve a correct balance between a high degree of autonomy and the need for a coherent strategic direction from an overall company point of view.**

This balance has been touched on in b. above, and the ownership of a mainline product would contribute significantly to devolving autonomy to a European Software Development Centre. A high level of autonomy in an organisation's constituent parts gives it a tremendous flexibility to respond to the needs of markets. Autonomy also enables parts of the organisation to pursue their own goals, even to the extent that there is a healthy level of competition between these parts.

At the same time there is a definite need for a high-level strategy that is clearly communicated in order that the needs of the company are addressed as a whole, overall direction is provided and key conflicts are resolved. This balance is clearly not easy to achieve so that the right decisions are made at the right level, and emphasises the importance of effective communications identified in c. above.

e. **The European Software Development Centre must achieve a correct balance between supporting the founder development organisation and the sales and marketing organisation in the local country.**

It is important, in the interest of autonomy and efficiency, that the software development centre should support the local sales and marketing organisation. There is a clear interest in economies of scale, reduction in lines of communication, and general support.

At the same time it is critically important that the companywide view is also maintained. There is a clear and obvious synergy between a development organisation and its founding development organisation, and there is an inherent danger in detachment in order to serve the interest of the geographically local organisation. The potential costs of having different development practises, and of not taking advantage of expertise gained in similar functions in other geographical locations, are very high.

Appendixes

A

Hewlett-Packard

Structure of Meeting

Hewlett-Packard representative: Andy Wilde

An introduction by Mike Henry on the concept of organisational benchmarking.

An introduction by each person present at the meeting on his or her personal history and background.

A presentation by Andy Wilde on Hewlett-Packard's internal organisation.

A presentation by Andy Wilde on Hewlett-Packards Software Engineering Systems Division.

A discussion on the responsibilities of the product manager/chief engineer as a result of Mike Henry's presentation on Rank Xerox's internal organisation.

A discussion on the next steps to take.

A

Comments on the Concept of Organisation Bench-marks

- The principles of organisational bench-marking were agreed upon, and it was also agreed that the benefit would be in the establishment of a long-term relationship.
- The existing list of topics was agreed to be a very good starting point for the bench-mark. (Please note that the original list has been modified slightly because Hewlett-Packard was sensitive about revealing its lessons learned.)

- If the bench-mark were to be simply a one-to-one between Rank Xerox and Hewlett-Packard, HP would not be interested in continuing.

- Of all the projected participants in the organisational bench-mark, Hewlett-Packard is most sensitive about Digital because they are very closely matched rivals.

B

Personal Background

- Andy Wilde joined ICL at Bracknell over 15 years ago and spent seven and a half years with ICL on system software for the 2900 series. He also represented ICL on X25. He then spent 18 months with Digital in its office systems group and left for organisational reasons. He has been with Hewlett-Packard for seven and a half years, spending six years in a software engineering role as a section manager in office systems. Eighteen months ago he moved to the Software Engineering Systems Division, which develops Hewlett-Packard's CASE tools, to set up the European end of a United States division.

C

Hewlett-Packard Organisation

- Hewlett-Packard has an organisational model that has been developed with experience. The model consists of four layers:

  - Sector
  - Group
  - Division
  - Section

- The key to the concept is the division. Each division operates as an autonomous business with total responsibility for its products. A model of the division is shown in the main body of the report in Exhibit V-1.

- A divisional general manager has worldwide responsibility for a product area, a headcount, and a budget, and has a revenue objective by product or business line.

- Each division consists of 6 functions—manufacturing, personnel, quality and productivity, financial administration, marketing, and research and development. Some of the functions within a division may be shared with another division if they share a physical location. In order to reduce overhead, typically sharing could involve personnel and financial administration. Also, quality and productivity is sometimes embedded elsewhere in the division rather than separate.

- The balance of people within the organisation will vary according to the type of business. For example, the balance of R & D and manufacturing will be different between software and hardware businesses.

- Typically each division contains 120-300 people divided into sections, with 3-5 projects per section and 6-10 engineers per project.
- The product manager is the first level up from the bottom in the management structure, yet has total responsibility for the product—including product marketing and revenue targets, not just production.
- There is a distinction between field marketing (which is concerned with sales within a country market) and product marketing (which is concerned with sales of that product across markets). This separation is at a very high point in the organisation, just below board level.
- The divisional model is a tried and tested concept—Hewlett-Packard has 96 divisions worldwide, and each division has a worldwide responsibility for its business area. A division may set up a separate operation, but this operation will then develop into a division using the same model.
- Hewlett-Packard has had overseas divisions with worldwide responsibility for a long time, and in order to set up the European software development centre at Pinewood, HP sent people from the United Kingdom to the United States to gain work experience, and then when HP set up the organisation, one or two key people from the United States came to the U.K. to get it off the ground.
- Hewlett-Packard has more than 7,500 people in research and development with an annual expenditure of $1.5 billion, 75% of which is spent on software development.
- As a corporate objective, Hewlett-Packard aims to improve its quality tenfold, and double its productivity every 5 years.

D

The Software Engineering Systems Division

- The divisional manager is Chuck House, and the marketing is run by Gail Hamilton.
- As a strategic part of HP's survival in the workstation market, the company decided that it needed a set of CASE tools. Originally the focus was internal use, but this focus became external as HP saw a business opportunity.
- The product is technical CASE—not MIS CASE, which focusses on commercial applications.
- SESD is unusual in that it is distributed geographically at three sites—Palo Alto, California; Fort Collins, Colorado; and Pinewood Bracknell. The normal model is for a division to have one base, but to provide local support.

- One reason for this geographical distribution is the expertise in Fort Collins, where OSF Motif was developed. Fort Collins contains part of the Apollo operation, which will eventually be integrated into Hewlett-Packard.
- This organisation also reflects the geographical distribution of sales, which is 20% U.S., 40% Europe, and 40% Japan.
- In addition there is a great deal of activity in Europe with the EEC on standards, which have to be tackled in Europe.
- Each country has to integrate third-party products, and the product changed from HPTEAMWORK to CADRE, for compatibility with all tool vendors.
- A great deal of Andy Wilde's activities at the moment are devoted to marketing and to supporting the integration of third-party products in Italy and France.
- The marketing methods that HP is adopting are to set up seminars and to invite the software development managers.

E

Responsibilities of the Product Manager/ Chief Engineer

- After the presentation on Rank Xerox's internal organisation, there was a discussion on the similarities between Rank Xerox and Hewlett-Packard, out of which a number of important points arose.
- Andy Wilde felt that the concept of total worldwide responsibility of the product manager was a critical ingredient of success in the development of software products, and the key to the success of the OAD (Office Automation Division).
- Digital used to separate functions so that, although software was developed in the United Kingdom, responsibility resided in the United States. This division caused major communications problems, and morale problems because product managers were not involved in important decisions, and many middle managers at Reading left the company (including Andy Wilde). It is believed that Digital has had to change the organisation since then to give more responsibility to the software developers in Reading.
- Hewlett-Packard had been able to give the OAD full autonomy, even though it was a start-up business, because several key people were either Britishers who had worked in the United States, or Americans who worked in the United Kingdom.

- The disadvantage of giving such autonomy to each division was the possibility of conflicts and interdivisional rivalries where businesses overlapped. Although in the past Hewlett-Packard had a laissez-faire attitude to these problems, it was felt by senior management that the merging of technologies made these problems more and more probable, and more higher-level decisions were now taken in order to resolve these issues as early as possible.

- The geographical distribution of product responsibility at Hewlett-Packard recognises a trend in the decreasing proportion of HP's United States business. Five years ago, the United States accounted for 60% of HP's total business; now that percentage has reduced to 40%.

- Hewlett-Packard is not very good at separating technical and line responsibility. It is not possible to progress within Hewlett-Packard without becoming a line manager. HP is unwilling to pay large salaries to technical staff because the company can take a graduate and make him/her as effective within three years.

- In order to clarify the definition of responsibilities, the Hewlett-Packard situation was summarised as follows:

    - The product manager has total responsibility for the production and marketing of the product worldwide, and the headcount and revenue generated.

    - The Hewlett-Packard project centre in each country is responsible for adapting the product to that country's and clients' needs.

    - The regional managers are responsible to the United States for sales in their individual markets.

F

The Next Steps

- In addition to the topics that have already been defined and agreed upon, Andy Wilde has suggested two additional ones:

    - Product life cycles as a topic of interest. The life cycle represents Hewlett-Packard's best practises.

    - A continuation of the discussion on responsibilities, since understanding of responsibilities was very necessary.

- Rank Xerox would continue to have first meetings as arranged with Prime, Digital, and Andersen Consulting—but a further contact with Hewlett-Packard would be arranged, hopefully before the end of May.

- Hewlett-Packard agreed to go ahead with the organisational bench-mark; HP agrees that the list of topics is a starting point.
- For the parties to the bench-mark to meet, it will be necessary to define a formula and a format.

B

Appendix: Prime

Structure of Meeting

Prime representative: Andy Ridgers

An introduction by Mike Henry on the concept of organisational bench-marking

A presentation by Andy Ridgers on Prime's history and organisation

Answers from Andy Ridgers to the points in the provisional list of topics

A final discussion on the next steps, and Andy Ridgers' major areas of interest

A
Prime Organisation

- Prime is a U.S. company, owned by Americans, although more than half of sales are outside the United States. Prime has a new organisation as a result of the J.H.Whitney buyout, which has resulted in breaking the company into divisions, and a new CEO, Jack Shields, who was brought in from Digital.

- The new organisation at Prime is split into 5 parts: international, systems integration, customer service, Computervision, and computer systems.

- International consists of subsidiary sales and service organisations; there is no international marketing. Marketing sits with the U.S. sales organisation and covers everything—product definition, product planning, announcements, trade shows and promotions in the U.S. This width of the marketing function causes confusion. The international vice-president is an American based in Boston and Munich.

- Systems integration is the glue that sticks the various bits together, such as EDI. This division of the company is a brand new development.

- Customer service is the profitable hardware and software maintenance parts of the company.

- Computervision was bought by Prime because Computervision was number two in the CAD/CAM software market, because Computervision was cheap (it had made announcements for new products that were delivered 12 months late, resulting in no sales for 12 months), and because as a software-only company, Computervision made products that ran on Prime equipment and thus the companies had a common customer base.

- Computer systems is what Prime used to be before the reorganisation, and is the division to which the development centre at Milton Keynes reports. Computer systems is part of the U.S. organisation, not part of the European operating companies. Prime U.K. is aware of them since the budget comes via Prime U.K., but they are an untappable resource.

- Andy Ridgers has been head of the software development centre at Milton Keynes for 1 month. He took the job on the condition that his boss in the United States should either grant the centre complete independence or make the centre more closely integrated. As a result of a decision to attempt to more closely integrate the centre, Andy works one week in four doing exactly the same job in the United States.

- Prime started in the U.K. in 1972, and the software development has been going since 1975. Software engineering exists more as a result of a historical accident rather than as a deliberate strategy. However, the U.K. costs are now $80-85K per head, as opposed to the U.S. costs of $100-105K per head, giving a higher ROI in the U.K. In addition, the U.K. now has some critical expertise and some very important products are done here.

- All software and hardware development is U.S. managed. Although Prime produces worldwide products at Milton Keynes, the operation is funded from the U.S. and delivered back to the U.S. Alpha testing is done in the U.K., but beta testing is done in the U.S.

- Milton Keynes has about 70 people, which represents 30% of the U.K. software development resource. There are two other sites that develop CAD/CAM software for Computervision, one at Harston with 110 people, and one at Penn Street with 38 people.

- Although reporting directly to the U.S., Milton Keynes has all the necessary expertise for development, testing and documentation—and has responsibility for a number of software products, such as OSI products. Milton Keynes used to share development with Australia on a database product that was marketed in the U.S., but Australia has since closed and all the development on this key product is done in the U.K.
- Prime has a number of problems as a result of its organisation, and as a result of its new situation. For example, the U.S. sales organisation uses engineering to help sell to critical clients, but the new international organisation has other priorities before deciding whether to have a European development capability.
- Although some bridge building with country sales organisations in Europe has taken place recently, local sales offices tend not to ask for support since they are organisationally very far from the software development in Milton Keynes (i.e., the two organisations meet at CEO level).

B

Answers from Andy Ridgers to the Points in the Provisional List of Topics

The benefits of a European Software Development Centre

Q. What is the perceived added value of a European Software Development Centre from the point of view of the client / parent company management / local management departments / distributors?

A. Answered in previous section.

Q. What triggered the setting up of the European Software Development Centre and why?

A. Answered in previous section.

Q. Why was its specific location chosen?

A. Reason lost in history, although another building was started and occupied in Milton Keynes. After 2 years it was still half empty and eventually abandoned.

Q. Have the actual benefits turned out to be very different from the original benefits envisaged?

A. There were no specific benefits envisaged.

The internal organisation of a European Software Development Centre

Q. Does the European Software Development Centre have a mission statement and, if so, what is it?

A. No, only clear ownership of a set of products.

Q. What are the goals?

A. Goals are associated with successful maintenance and development in terms of quality and delivery; goals are not tied to sales or any revenue goals. Customer satisfaction via feedback on bugs and usability is also used as a quality measure. Prime has recently gone through a significant change, and although 2 years ago goals might have been growth oriented, now they are cost and profitability oriented.

Q. How is the organisation structured in terms of functions, workgroups, roles and responsibilities, and reporting relationships?

A. Software development at Milton Keynes is grouped into teams, and the larger groups have section managers. There is also a team of authors who are not integrated into the development teams, but this setup is believed to be wrong and liable to change.

Milton Keynes also has an accountant and human resources manager and a small operations section. The accountant is not a management accountant—more of a bookkeeper.

Testing is part of engineering; engineers do everything, from testing to documentation. However, 1 product has 35 engineers, and so there are some test specialists on this product.

Q. What are its dimensions in terms of number of staff, products and locations?

A. There are three managers—one with 4 teams, two with 3 teams each, and about 4-5 engineers per team. The relationship of teams to products is quite varied, so they have one team of 6 that looks after 56 products, and a team of 35 on one product.

Engineers produce a globalised product, with all messages in a separate area for later localisation by the international group, which also changes the documentation. They also have internationalisation, so that, for example, a 4GL will cope with the different ways of formatting numbers by access to a library of routines.

Q. What is the skills matrix of the organisation?

A. Engineers, Authors, Operators, Accountants, Human Resources, Management

Skills are related to products—e.g., X400. They have a goal of not recruiting people without a degree.

Q. What lessons have been learned during the setting up and running of the European organisation?

A. The lessons were learned a long time ago, but they are continually relearning how to interface with the United States.

They suffer from the not-invented-here syndrome, and the lack of informal communications that arise from not having conversations while passing each other in the corridor or in meetings. As a result, the new initiative of working closer is being tried.

There are about 100 trips per year, some people travelling 2-3 times, some more. However, since the U.K. now has total development responsibility for the single most important software product, the U.K. now tends to get more visits from the United States. Andy's boss visits once a quarter, as does his boss's boss. Peers tend not to visit.

Q. What software performance metrics are used—e.g., for evaluating the effectiveness of software development process and the quality of output? (e.g., number of lines of code per module; number of faults per line of code)

A. Metrics = problem reports. Prime has no performance metrics for lines of code, code goals, or size goals. Prime has a number of bench-marks for product performance.

Prime performs post-mortem reviews to identify false starts, and to review how far marketing moved the goal-posts. Prime also has varying degrees of inspection, and has instituted the Fagin method—with readers and moderators etcetera—but not as a standard.

Prime doesn't use scientific estimating or history for estimating; a senior consultant produces a gross person-years estimate.

Q. Recruiting expectations with respect to:

- Recruiting experts
- Recruiting to train

A. Prime recruits experts unwillingly, but where necessary. Prime recruits to train, to grow internally for all the standard reasons.

The last expert Prime recruited was 2 years ago, when the company needed somebody who had commercial database experience—that is, not a technical expert, but someone with an understanding of the client's needs.

Budget and headcount are known, but are not performance measures. A year ago, headcount and expenditure were important; now only expenditure is important.

Andy Ridgers has been with Prime for eight and a half years. Although 10% is the industry average of attrition, Prime has been consistently below 8%. However, last year was bad because of the uncertainty about the company's future, and in November, 30 people were laid off.

Q. How long did it take to set up the European Software Development Centre, and what is the process and culture for managing change requirements?

Everything has changed because the culture allows European organisations to do it their way within certain constraints. They can work differently in Europe, and have some autonomy. Prime does not have a salary freeze, for example. It is generally recognised in the United States that attempts to control too tightly can stifle research and development.

There is no real lobbying mechanism for deciding where a product will be developed, although the initial owner of the idea has a strong case. There can be conflicts, especially for such things as EDI. Prime tries to do it by mutual agreement, but if necessary, the V.P. will bang heads. If the product is very large, a formal study may go for consideration by the engineering and marketing V.P.s. A major consideration is the resources that are available, or that could be freed.

Prime has formal reviews but they are not decision-making processes, and the process is never followed to the letter. Prime is not totally committed to quality reviews, and does not use external teams.

The interactions of a European Software Development Centre with other organisations

Q. What are the role and responsibilities of the European Software Development Centre with respect to the parent organisation?

A. Answered in previous section.

Q. What are the interfaces to the parent organisation, and what processes exist for intercommunication, reporting, information sharing, etcetera.

A. Electronic mail, first commercial implementation of X25, companywide documentation structure, weekly status reporting on all projects showing exceptions to plan, a weekly consolidated status report, and a weekly phone call if there is geographical separation of programme management from the development team and a conference call if critical.

Q. How are funding and budgeting managed?

A. Funding is a percentage of corporate revenue, and there is an annual budget, headcount, and list of things to do. There are meetings once or twice a year in order to decide sales and marketing priorities.

There is no real concern about headcount, but more about expenditure. Therefore, provided they are profitable, additional people can be taken on.

Q. How is the performance of the European Software Development Centre measured?

A. They are judged on results, as above.

Q. What commonality of design development and support processes, and development tools/environments, exists between the European and parent organisations?

A. Support processes and phase reviews are common, but all development tools and environments are different everywhere, and up to the individual manager. Attempts to enforce commonality have failed in the past.

Q. To what extent is there interchange of staff between the European and parent organisation?

A. There is not much interchange of staff, perhaps for stints up to one month, although there have been rare secondments of up to one year.

There are no major areas of difference or advantage between the United States and the United Kingdom, except that there is no acceptance in the U.K. of incentivisation and bonus payments for on-time completion.

Q. How does the European Software Development Centre relate to:

- End users
- Marketing
- Sales

A. Decisions on products are made as a result of a two-way discussion between research & development and marketing, although marketing has the last word on whether to drop extra requirements, wait, etcetera. Decisions are a continuous process.

A programme manager will produce a requirements document that is purely technical, but a functional specification will be written by an engineer. This specification will contain service plans, a design specification, a training plan, documentation specification, etcetera. Approval of the functional specification is conducted by many people—such as marketing, customer service, and even occasionally sales.

The functional specification is very detailed and unique, but has some problems since it does not specify what the product does not do, and requires interpretation by a senior consultant. The document is also very technical and can be difficult for marketing to read. Such a document can take a long time to produce, and sometimes a great deal of software is already written by the time the document is approved.

Q. What are the roles and responsibilities of the European Software Development Centre relative to:

- Pre-sales support
- Post-product launch
- Product development /launch

A. Prime does slightly more support than before, although no pre-sales support or product launch. The official route for an English end user with a post-sale problem would be via Hayes in the U.K., then to U.S. customer service, and finally to Milton Keynes.

C

A Final Discussion on the Next Steps, and Andy Ridgers' Major Areas of Interest

- Andy will be prepared to go forward to the next stage on a 'suck it and see' basis.

- Major areas of interest are:

- Relationships with other parts of the organisation
- Communications and teamwork with the U.S. parent

C

Appendix: Digital Equipment

Structure of Meeting

Digital representative: Jac Simensen

An introduction by Mike Henry on the concept of organisational benchmarking

A discussion on the next steps, and reactions from Digital

An explanation of Digital's organisation and Jac Simensen's responsibilities

A description of the Rank Xerox organisation

A final discussion on the next steps

A

Reactions from Digital

- The initial reaction is that it is an intriguing idea worth exploring.
- Jac referred to balancing the 3 Cs—collaborators, customers, and competitors.
- Jac can perceive the addition of other companies down the road, but initially the reaction to the companies involved is as follows:
  - Xerox is O.K., although a bit of a competitor.
  - Andersen is no problem at all.
  - Prime is also a customer, so no problem.

  - Hewlett-Packard presents some concern, since it is perceived as having the potential to join Digital and IBM in the top tier. Notwithstanding this worry, HP doesn't present a critical go/no-go concern.
  - IBM on the other hand would definitely mean a no-go decision; Digital is not prepared to share anything with IBM.
  - Bell Northern is O.K.
  - Siemens is probably O.K.; it cooperates on telephony, but could be a major competitor in the future.

- Some interest was expressed in the phase review process. Digital has a very specific process that is both horrible and wonderful at the same time.
- Jac would be very happy to participate in a pilot in order to see if it can work. Digital in the U.K. no longer has such a parent/child relationship with the United States as before, but they have made many mistakes and would benefit from a learning process.

B

An Explanation of Digital's Organisation and Jac Simensen's Responsibilities

- Jac Simensen is directly responsible for an organisation that includes Scotland, Eire, and Australia as well as Reading. However, he is the senior engineering manager in Reading, and has responsibility for all facilities, without having line responsibility for all the people.
- Software development started in the U.K. 18 years ago but with a U.S. focus, mostly working on X.25. They learned about European markets, and their leadership in OSI came out of Europe, as did open systems, although they are no longer such leaders in open systems as before.
- Digital was originally forced to have a European organisation in order to deal with the EEC, but now such an organisation is part of Digital's business practise. Digital is becoming more and more international, and there is now more revenue and profit outside the United States than inside.
- Jac Simensen was originally recruited as an Ethernet expert, and ended up heading an 850-person organisation that was eventually split. Now, apart from his responsibilities to support sales (etc.) as senior engineering manager, he is responsible for corporate backbone networks.
- Digital has 1,500 engineering and support staff in Europe. In the U.K. there are 800 in software, approximately one-third of whom report to Jac, as well as 60 hardware people who all report directly to Jac.

- There are 120-150 software people in Italy, and 40 hardware people in Germany (in Munich) working on disks and storage.
- There are 250 software people in France. Digital has been unsuccessful with hardware in France, but now has a worldwide telecommunications centre in France in Valbonne. Digital was given very preferential terms by the French government, which wants to develop a lead in communications and has developed a very good relationship as a result.
- There are 40-80 people in Scotland.
- The European headquarters is in Geneva.
- Many U.K. products have been successful. France was very slow to get off the mark. Italy has applied the lessons learned very well and is doing better earlier than the others. Digital also has a silicon plant in Israel.
- The United Kingdom is the home of a number of important Digital products such as All-in-One, Corporate backbone networks, VMS(TP), and Mail. Italy, on the other hand, is dedicated to VMS, which is run from the U.S., so that code from Italy is integrated into the United States.
- Digital has a typically loose organisation. Although it looks as if Digital has a European organisation reporting to David Stone, the International V.P. in Geneva, the organisation really reports to Bill Johnson in the U.S.
- Corporate backbone networks and mail in the U.K., and communications in France, report to Bill Johnson in the U.S., who is responsible for all telecommunications and networks products. Other products, such as All-in-One and VMS, report to the V.P. in charge of DSSG.
- All funding strategies go through the United States, but all strategies have to be run round the other groups before the strategies are formally presented.
- Digital is in the process of a massive reorganisation at most levels, partly because of the departure of Jack Shields to Prime. Jack Shields used to head up sales, service and support, and industry marketing, while Jack Smith was responsible for engineering, manufacturing, and product marketing. Jack Shields' parts of the organisation (except industry marketing, which is disappearing) are being moved under Jack Smith, who is becoming a more classic COO. Both the Jacks were directly under Ken Olsen. The reorganisation should be complete by July.

- Bill Johnson's Telecommunications and Networks is divided into five parts—CBN (Jac Simensen), Telecommunications, LAN, LAA, and OSS. There is a great deal of cross-communication as well as upwards and downwards communication in a kind of matrix structure. For example, each of the five groups has a strategist, and Bill Johnson has a strategist, and they all communicate. One of Digital's major strengths is that all products integrate.

- Strategies get beaten up, but people have a significant amount of autonomy. Strategy reviews are advisory, and take place at the highest level by DEC's "best and finest" high-level technical V.P.s, but they also have teeth.

- Marketing and engineering report separately, but interact a great deal. There is, however, a major change taking place as engineering is evolving into more of a business unit. Engineering managers were measured perceptually, but now they are going to become more like business managers who have revenue and profit objectives.

- There is also a cultural change as Digital looks at investment opportunities, and a great deal of activity is taking place in the Far East. There is also a strong European feeling, and it is believed that Geoff Shingles in the U.K. and P.C. Fallohi in France are becoming more important in the company.

- The greater importance of Europe is due principally to success. It has taken 15 years, and an accelerated pace in the last five years, for Digital to prove itself and get control of its own activities.

- Like other equipment vendors, Digital must change towards more services orientation and look for where it can add value, and where the client will pay for extra services.

D

Appendix: Andersen Consulting

Structure of Meeting

Andersen Software representatives: Andrew May and David Sallis

An introduction by Mike Henry on the concept of organisational benchmarking

Personal introductions

An initial discussion on the background and benefits of a European Software Development Centre

A review with Andersen Consulting of the points in the provisional list of topics

A
Personal Introductions

David Sallis was a consulting manager with Andersen, mostly in the oil industry. He managed 60 people working on a major systems development job with Shell in Malaysia, before going to Chicago for 18 months. His function in Chicago was to be a liaison with the various European software development projects. Since last year he has been responsible for the new European Software Development Centre in Sophia-Antipolis in the south of France.

Andrew May has been in software product marketing for some considerable time—with Metier and then with Arthur Young. Andrew is now responsible for marketing Foundation, which is the Andersen set of CASE tools.

B

An Initial Discussion on the Background and Benefits of a European Software Development Centre

The history of Andersen Software in Europe is that each country developed its own software for its own market, so Andersen had development teams in Spain and Italy, as well as the U.K. By mid-1988, Andersen also had a substantial software laboratory in Chicago, and at this stage the company decided to centralise European efforts in one place and selected Sophia-Antipolis, near Nice in the south of France.

In January 1989, the lab was established but had significant teething problems over staffing, telecomms, equipment, finance, and communications with Chicago. By mid-1989, the first project was moving smoothly, though still with communication problems with Chicago (language, visibility, credibility). A substantial applications software project was added, and permanent premises commissioned nearby.

By the end of 1989 the first software was delivered to a pilot site in the United States and was very well received. A support system was established, with one developer going to the pilot site; investment in radio-pagers was unnecessary since the second-line support was not needed.

The move to the new premises was made in March 1990, but not fully completed until May, although Andersen lost only 2 days of production. The site now has space for 75 people, but with 50 people in applications software and 17 in systems software, Andersen still does not have room for the 35 people in three teams in Italy (in Milan, Padua, and Parma).

From a marketing perspective, the three main benefits of the European Software Development Centre are credibility to the clients, proximity to the market-place, and the ability to appreciate the physical differences between the regions.

David Sallis believes that having worked in Chicago for 18 months was a key advantage to the manager of the European Centre when he set it up.

The degree of investment is dependent on the worth of the business case that is presented to the investment committee.

A great deal (more than 50%) of the software development staff are cycled through from the consultancy practise, and they all have a common grounding in the use of the Andersen CASE tools as part of the basic training. This high level of movement within the organisation provides an advantage in that all the 20,000 field staff in consultancy are aware of, use, and can potentially sell the CASE products.

As well as the advantage of selling the products, there is also the advantage that user requirements are captured better, and feedback after product launch is also improved.

The nature of Andersen's software products requires a very fast response and a fast production cycle in order to get to the market in time.

A strength of the organisation is the large amount of local autonomy inherent in a partnership and the tendency to decentralise.

C

A Review with Andersen Consulting of the Points in the Provisional List of Topics

The benefits of a European Software Development Centre

Q. What is the perceived added value of a European Software Development Centre from the point of view of the client / parent company management / local management departments / distributors?

A. Demonstrates internationalism and worldwide commitment. It provides a European skill base for customer sales and support, and local market support—e.g., Bull.

Operations are less costly, there is increased staffing flexibility due to decentralisation and they are located in a high-technology community and have a platform for building skills in Europe. There are also financial advantages and support advantages for the French practise.

Q. What triggered the setting up of the European Software Development Centre and why?

A. Impetus was the growth of European sales, and the need for a platform for local support.

Q. Why was the specific location chosen?

There were significant financial advantages, tax breaks, internal funding and low costs. Also, being in a high-technology community means opportunities for joint ventures and eventually a skilled local labour market, and it is an attractive location for staff.

Q. Have the actual benefits turned out to be very different from the original benefits envisaged?

A. The financial benefits have been realised; it is too early to tell for the rest.

The internal organisation of a European Software Development Centre

Q. Does the European Software Development Centre have a mission statement and, if so, what is it?

A. The mission for Foundation (the CASE product) is:

To build a CASE product that is
- a market leader
- full life-cycle
- integrated
- industrial strength
- international
- multiplatform

Q. What are the goals?

A.
- Develop a substantial development centre with highly skilled multidisciplinary staff
- Demonstrate international presence
- Support European markets
- Reduce costs
- Provide platform for skills development

Q. How is the organisation structured in terms of functions, workgroups, roles and responsibilities, and reporting relationships?

A. Reports administratively to Paris, and functionally to Chicago.

Andersen is now migrating to a product-oriented organisation where product executives will control development of software, documentation, training, support, marketing and sales support. Some functions such as phone support and conducting the training will be handled regionally.

Andersen has a major career problem with the introduction of software engineers. Traditionally, with a strong corporate culture, progression was towards partner or out of the firm. This dichotomy is very difficult to maintain when recruiting technical specialists and this problem is not fully resolved.

Q. What are its dimensions in terms of number of staff, products and locations?

A. 55 in Sofia
25 in Padua
12 in Milan
20 in London

They have product responsibility for 5 products—the planning tool for workstations, the batch implementation tool, the IMS/DC implementation tool, and 2 implementation tools for Bull, GCOS 7 and GCOS 8.

Q. What is the skills matrix of the organisation?

A. Almost all are software engineers at present. These are recruited from European universities or borrowed from consulting offices.

With the new organisation, they are attracting a wider mix—trainers, technical writers, etcetera.

Q. What lessons have been learned during the setting up and running of the European organisation?

A. Plan for growth, establish critical mass early, and plan for twice the office space you think you need.

Make a senior person from central available during set-up in order to pull strings, get resources, and ensure visibility.

Make the centre as autonomous as possible and perform as many functions as possible locally.

Establish good communications (WANs).

Have an appropriate level of administrative support for new staff (housing, cars, hand-holding).

Recognise the heterogeneity of Europe as compared to the United States.

Have frequent (4-8 weeks) meetings between senior staff on both sides.

Q. What software performance metrics are used—e.g., for evaluating the effectiveness of the software development process and the quality of output?. (e.g., number of lines of code per module; number of faults per line of code)

A. Don't measure performance except by detailed budgeting, planning and reporting based on standard guidelines (METHOD/1).

Periodic independent QA reviews.

After beta testing they measure product quality by number and severity of reported faults.

Q. Recruiting expectations with respect to:

- Recruiting of experts
- Recruiting to train

A. Recruit internally and externally—with good results so far and better than in the United States.

Q. How long did it take to set up the European Software Development Centre, and what is the process and culture for managing change requirements?

A. From site selection to permanent premises took two years.

The interactions of a European Software Development Centre with other organisations

Q. What are the roles and responsibilities of the European Software Development Centre with respect to the parent organisation?

A. Develop products for the Foundation CASE family.

Provide a support centre for:
- European Clients
- European Markets (BULL)
- European-developed products (interim)

Support sales and marketing in Europe.

Q. What are the interfaces to the parent organisation, and what processes exist for intercommunication, reporting, information sharing, etcetera?

A. Transition to the new organisation is proving very painful because of the staffing/financial rearrangements implied. The new, detailed implementation of the organisation is not yet decided.

WAN/E-mail
Access to central mainframe
Wang
Fax
Regular meetings
Satellite video

Q. How is funding and budgeting managed?

A. Top-down investment number ($ 40 million for product development alone)

Bottom-up proposals from executives
Negotiation until they meet
Funding from joint ventures with vendors and consulting branch

Q. How is the performance of the European Software Development Centre measured?

A. Against budget, schedule, quality

Q. What commonality of design development and support processes, and development tools/environments, exists between the European and parent organisations?

They use all their own CASE tools, along with common other tools, common architectures and environments.

Q. To what extent is there interchange of staff between the European and parent organisation?

A. Throughout the firm there is significant international staff movement. The parent and the lab are staffed largely with consulting people from the 150 offices worldwide.

Q. How does the European Software Development Centre relate to:
- End users

A. Limited at present to promotions, pilot sites, trade shows. Will increase to encompass support and training when products are launched.

- Marketing
  Provide input for marketing materials, support for trade shows, PR, demos, presentations, etcetera.

- Sales
  Sales force training, sales materials, client visits and promotions.

Q. What are the roles and responsibilities of the European Software Development Centre relative to:
- Pre-sales support

A. Marketing materials, demos, presentations, promotions, trade shows, PR, case studies

- Post-product launch

A. Second-line support and installation

- Product development /launch

A. Launch committee, press plus above

E

Appendix: Siemens

Structure of Meeting

Siemens' representative: George Brooke

An introduction by Mike Henry on the concept of organisational benchmarking.

A general discussion on Siemens' experiences in the U.K.

A
Siemens' Experiences

- Siemens is implementing Fagin's approach to design reviews.
- Siemens' software development staff in the U.K. has grown from zero to 80 people in four years.
- Siemens in Woodley reports to Germany, not to the U.K. operating company, Siemens plc.
- Woodley is developing a working environment that is different from the company culture. Siemens has an enormous, very efficient bureaucracy that is 100% paper-based, but is developing a software village approach.
- All staff are new to Siemens; there are no long-term Siemens employees.
- No managers are connected to the electronic mail system; only software developers use it.
- Siemens is moving its corporate headquarters back to Berlin.
- Because of the Nixdorf takeover, Siemens is now having to provide technical and service support in a much bigger way and has gone from 200 to 1,000 people in this area.

- They have strong links with Germany, and most documents and meetings are in German. They are due to have a meeting shortly to review their interfaces with Germany from a German point of view.
- One of the most important ingredients for success is to have a strong champion for the software development centre in the parent organisation.
- Because of a time lag, they have had difficulties in the past with moving people into new projects smoothly as old projects come to fruition.
- They also originally had difficulty because people didn't have sufficient ownership of the products, which created motivation problems, but greater involvement with customers and planners has improved this situation.
- They would like to develop and sell their own products in the U.K., but are unable to add headcount on their own initiative. Part of the reason for U.K. products is to have customers that are less remote.
- They have a joint development with Germany on the development of a UNIX kernel, and now have responsibility for the spooling system, the graphical user interface, collage, and windows. This project is integrated with the decisions being made in Germany and the code is open.
- The German side does not like having a split kernel, but was previously using contractors through shortage of staff. The use of contractors is now stopped.
- Only 5% of problems are technical; the real problems are organisational and managerial, which is the reason for most of the travelling to Germany.
- Staffing is funded out of Germany, including the headcount, hours, and budget—all of which are covered by projects. There is very little flexibility, so additional projects have to be resourced by extra hours, extra heads are not allowed, and there is month-by-month tracking.
- Siemens Woodley has lost some outstanding people through frustration from fighting the organisation. They want to expand faster than the parent company wants, and want to support Siemens plc in the U.K.
- There are major problems in setting up a small outpost of a very large organisation because there is an inevitable major difference in culture between the two. Woodley now has one person who interfaces with the U.K. parts of the organisation in order to open a gateway.

- Siemens Woodley has additional resources from work students who come over from Germany. These industry placements tend to be the best students from Germany (it is a reward to come to the U.K.), they are highly motivated if overqualified, and since they tend to work for Siemens every holiday, they have gone through some kind of induction process.

- They have mapped their grades at Woodley onto the Siemens management grades of 0 to 4. At the same time, they have developed a technical path of consultancy for staff without management skills. However, lack of critical mass has led to difficulties in allocating the services of these technical experts.

- They have also created narrower bands artificially in the grading systems in order to give people some leadership skills development early, before group and team leader. A group leader will be responsible for twenty people or more.

- George Brooke as manager has two staff functions—administration and office management. Beneath him are 5 groups, staffed as follows:

Technical Support	2
Quality Assurance TQM	20
DOS and OS/2	28
UNIX	22
Commercial	2

- George Brooke finds that German engineers are solid, reliable and clear, but they lack inspiration. British engineers, on the other hand, are more career-oriented, even above the company, and they tend to be very concerned about job descriptions.

- Staff appraisal is a process of the individual and team leader independently scoring performance with a form, and then differences are discussed. Appraisals are not linked to salary reviews.

- The salary review process is changing. Formerly it was a process of allocating the budget across salary bands, but is now based more upon performance. Some ad-hoc payments have been made for extensive hours but, in some cases, hours were done without being reported, so this basis has been rejected as unfair. Now, bonuses depend on bringing projects in within budget.

- Social activities have included wine and cheese parties, but they are now short of space. Siemens has a sports and social club, but the Woodley staff tended not to fit in because of different ages and interests, so they have a small social fund of their own that they keep quiet about.

- A major problem at the moment is the splitting of the centre into two sites. Splitting would normally be a problem, but has been exacerbated by the Nixdorf acquisition. They had found and chosen a new building but have been forced to use a Nixdorf building. The building is more remote and at Bracknell, which is unpopular; the facilities are bad; and there is a severe culture clash between marketing people in smart suits and software developers in jeans. Workers also have niggles such as having to work in an open-plan office with no screens. They have had one resignation already and are expecting more.

- They have had some conflicts with Germany over quality. Planners tend not to be interested in such things as life cycles, and they have complained about the quality of software that has been sent over from Germany. This has led to some management-development confrontations and consequent breakdowns in confidence.

- Out of the original 4 or 5 people, two have survived. Despite the best intentions, it is difficult to promote internally since not all staff are capable of growing with the job. Also, their career advancement is limited within the Woodley part of the organisation, as opposed to within Siemens as a whole.

- It might be useful for the parties to this bench-mark to discuss common recruiting problems and the salary competition, since they are all fishing in the same small pool.

F

Appendix: Bell Northern Research

Structure of Meeting

Bell representative: Mike Turner

An introduction by Mike Henry on the concept of organisational bench-marking.

Background of participants

A brief discussion on Bell Northern's interest areas and its attitudes to an imminent group meeting with the other participants.

- Mike Turner spent 12 years with Plessey and Northern Telecom, before moving to Bell Northern research, for whom he worked in Canada for three and a half years.
- Bell Northern set up its new lab in Maidenhead in 1984, and Mike was one of the main project managers on hardware and software projects. Since September he has moved into human resources.
- Bell Northern's main competitors are AT&T, Philips, Ericsson and Siemens.
- Bell Northern already belongs to a group of companies that discuss common issues such as salaries. The other members of this group are British Telecom, GPT, Mercury, Motorola, Hewlett-Packard, STC, and Philips.
- The company is are very familiar with the bench-marking concept, particularly with regard to issues such as human resources.

- Bell Northern has its own phase review process called Bulk Charge Supplement, and has suffered many project cancellations as a result, although the company accepts risk as part of the business.
- Bell Northern is not sure how useful the group meetings could be, but is prepared to try them and see.
- Although the company tends to think it's better at what it does than the competition, it accepts that there are lessons to be learned.
- Bell Northern has two major interest areas—one is the relationship between marketing and development, and the other is career development.
- The company is currently in a major new initiative to develop a dual career path for software engineers—a management path and a technical leadership path.

G

Appendix: Original List of Topics

The following is the list of topics that was developed as a starting point for the bench-mark. The list was amended slightly since there was sensitivity in some cases to questions 2.6 and 2.7.

The list of topics is divided into three main areas:

The benefits of a European Software Development Centre

The internal organisation of a European Software Development Centre

The interactions of a European Software Development Centre with other organisations

A

The Benefits of a European Software Development Centre

Detailed topics:

1. What is the perceived added value of a European Software Development Centre from the point of view of the client / parent company management / local management departments / distributors?
2. What triggered the setting up of the European Software Development Centre and why?
3. Why was its specific location chosen?
4. How have the actual benefits been different from the original benefits envisaged?

B

The Internal Organisation of a European Software Development Centre

1. Does the European Software Development Centre have a mission statement and, if so, what is it?
2. What are the goals?
3. How is the organisation structured in terms of functions, workgroups, roles and responsibilities, and reporting relationships?
4. What are the organisation's dimensions in terms of number of staff, products and locations?
5. What is the skills matrix of the organisation?
6. What lessons have been learned during the setting up and running of the European organisation?
7. What software performance metrics are used—e.g., for evaluating the effectiveness of the software development process and the quality of output? (e.g., number of lines of code per person-year; number of faults per line of code)
8. Recruiting expectations with respect to:
   - Recruiting of experts
   - Recruiting to train
9. How long did it take to set up the European Software Development Centre, and what is the process and culture for managing change requirements?

C

The Interactions of a European Software Development Centre with Other Organisations

1. What are the role and responsibilities of the European Software Development Centre with respect to the parent organisation?
2. What are the interfaces to the parent organisation, and what processes exist for intercommunication, reporting, information sharing, etcetera?
3. How is funding and budgeting managed?
4. How is the performance of the European Software Development Centre measured?
5. What commonality of design development and support processes, and development tools/environments, exists between the European and parent organisations?

6. To what extent is there interchange of staff between the European and parent organisations?

7. How does the European Software Development Centre relate to:
   - End users?
   - Marketing?
   - Sales?

8. What are the roles and responsibilities of the European Software Development Centre relative to:
   - Pre-sales support?
   - Post-product launch?